

Amendments to the Claims

This listing of claims supersedes all prior listing of claims.

1. (Currently amended) A method in a communication system for selecting a routing area for establishing communication between a primary communication network having a primary routing area and a communication device through a secondary communication network, the communication device supporting a cellular core network signaling protocol of the primary communication network and having a primary identification, the method comprising:

creating a plurality of secondary routing areas, each of the plurality of secondary routing areas comprising at least one of a plurality of secondary communication networks, each of the plurality of secondary communication networks capable of providing a communication coverage for the communication device;

detecting, by the secondary communication network, a presence of the communication device through a particular secondary communication network of the plurality of secondary communication networks;

determining a target routing area of the plurality of secondary routing areas, the target routing area having the particular secondary communication network; and

re-directing services originally directed to the primary identification of the communication device in the primary communication network to the target routing area by the primary communication network.

2. (Original) The method of claim 1, wherein creating a plurality of secondary routing areas includes:

assigning the plurality of secondary routing areas to an alternative network controller, the alternative network controller capable of establishing communication between the primary communication network and the communication device in the target routing area through the alternative network controller.

3. (Original) The method of claim 2, wherein establishing communication between the primary communication network and the communication device in the target routing through the alternative network controller by the alternative network controller includes:

converting a protocol of the secondary communication network into the cellular core network signaling protocol of the primary communication network; and

converting the cellular core network signaling protocol of the primary communication network into the protocol of the secondary communication network.

4. (Original) The method of claim 2, wherein establishing communication between the primary communication network and the communication device in the target routing through the alternative network controller by the alternative network controller includes:

setting up a tunnel between the communication device and the alternative network controller; and

controlling the tunnel.

5. (Original) The method of claim 2, wherein detecting a presence of the communication device through a particular secondary communication network of the plurality of secondary communication networks includes:

receiving a request from the communication device to access a particular secondary communication network of the plurality of secondary communication network by the particular secondary communication network of the plurality of secondary communication networks;

assigning a secondary identification to the communication device in response to receiving the request; and

authorizing the communication device to access the particular secondary communication network of the plurality of secondary communication networks.

6. (Original) The method of claim 5, wherein determining a target routing area of the plurality of secondary routing areas, the target routing area having the particular secondary communication network includes:

receiving a secondary routing area identification of the target routing area by the primary communication network; and

receiving the secondary identification of the communication device by the primary communication network.

7. (Original) The method of claim 6, re-directing services originally directed to the primary identification of the communication device in the primary communication network to the target routing area by the primary communication network includes:

associating the primary identification of the communication device with the secondary identification of the communication device by the primary communication network; and

re-directing the services originally directed to the primary identification of the communication device to the secondary routing area identification of the target routing area.

8. (Original) The method of claim 7, wherein re-directing the services originally directed to the primary identification of the communication device to the secondary routing area identification of the target routing area by the primary communication network includes:

identifying available secondary communication networks associated with the target routing area; and

causing the available secondary communication networks associated with the target routing area to page the communication device.

9. (Original) The method of claim 6, wherein determining a target routing area of the plurality of secondary routing areas, the target routing area having the particular secondary communication network further comprises:

determining by the alternative network controller a secondary routing area identification of a proximate target routing area proximate to the target routing area based upon the secondary routing area identification of the target routing area.

10. (Original) The method of claim 9, re-directing services originally directed to the primary identification of the communication device in the primary communication network to the target routing area by the primary communication network includes:

associating the primary identification of the communication device with the secondary identification of the communication device by the primary communication network; and
re-directing the services originally directed to the primary identification of the communication device to the secondary routing area identification of the target routing area and to the secondary routing area identification of the proximate target routing area.

11. (Original) The method of claim 10, wherein re-directing the services originally directed to the primary identification of the communication device to the secondary routing area identification of the target routing area and to the secondary routing area identification of the proximate target routing area by the primary communication network includes:

identifying available secondary communication networks associated with the target routing area and with the proximate target routing area; and

causing the available secondary communication networks associated with the target routing area and with the proximate target routing area to page the communication device.

12. (Currently amended) A communication system configured to select an appropriate routing area, the communication system comprising:

- a primary communication network configured to support a primary cellular core network signaling protocol, the primary communication network having a primary routing area;

- an alternative network controller coupled to the primary communication network, the alternative network controller configured to communicate with the primary communication network using the primary cellular core network signaling protocol;

- a plurality of secondary communication networks coupled to the alternative network controller, each of the plurality of secondary communication networks configured to support a secondary communication network protocol, the plurality of secondary communication networks grouped into a plurality of secondary routing areas, each of the plurality of secondary routing areas comprising at least one of the plurality of secondary communication networks;

- a communication device coupled to a particular secondary communication network of the plurality of secondary communication networks, the communication device having a primary identification and configured to support the primary cellular core network signaling protocol and the secondary communication network protocol, wherein a presence of the communication device is detected by the secondary communication network; and

- a routing area selector coupled to the alternative network controller, the routing area selector configured to identify a target routing area having the particular secondary communication network.

wherein the alternative network controller is further configured to direct services initially directed to the primary identification of the communication device to the target routing area and to establish communication between the primary communication network and the communication device through the alternative network controller.

13. (Original) The communication system of claim 12, wherein the alternative network controller further comprises a protocol converter configured to convert the primary cellular communication core network signaling protocol into the secondary communication network protocol, and to convert the secondary communication network protocol into the primary cellular core network signaling protocols.

14. (Original) The communication system of claim 12, wherein the alternative network controller further comprises a tunnel controller configured to set up, maintain, and control a tunnel between the communication device and the alternative network controller.

15. (Original) The communication system of claim 12, wherein the routing area selector is further configured to identify available secondary communication networks associated with the target routing area.

16. (Original) The communication system of claim 15, wherein the alternative network controller is further configured to cause the available secondary communication networks associated with the target routing area to page the communication device.

17. (Original) The communication system of claim 15, wherein the routing area selector is further configured to determine a proximate target routing area proximate to the target routing area and to further identify available secondary communication networks associated with the proximate target routing area.

18. (Original) The communication system of claim 17, wherein the alternative network controller further configured to cause the available secondary communication networks associated with the target routing area and with the proximate target routing area to page the communication device.

19. (New) The method of claim 1, wherein the presence of communication device is detected when the secondary communication network receives a request from the communication device to access the particular secondary communication network.

20. (New) The method of claim 1, wherein the target routing area is determined by a routing area selector isolated from the primary and secondary communication networks.

21. (New) The method of claim 12, wherein the presence of communication device is detected when the secondary communication network receives a request from the communication device to access the particular secondary communication network.

22. (New) The method of claim 12, wherein the routing area selector is isolated from the primary and secondary communication networks.